

**Gopalakrishna, H. S.; Umarani, Prakash G.**

**On a class of functions close to functions of bounded boundary rotation.** (English)

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Denoting the class of all regular functions  $f(z)$  in the open unit disc with  $f(0) = 0$ ,  $f'(0) = 1$  by  $A$  and the class of functions of bounded boundary rotation by  $V_k$  the authors define the class  $W(k, \alpha)$  for  $k \geq 2$  and  $|\alpha| \leq \pi/2$  as follows.  $f$  in  $A$  belongs to  $W(k, \alpha)$  if and only if

$$\operatorname{Re}\left\{e^{i\alpha}\left(\frac{f'(z)}{g'(z)}\right)\right\} > 0 \text{ for } |z| < 1$$

for some  $g \in V_k$ . Let  $W_k = \cup_{\alpha} W(k, \alpha)$ . Sharp radii of convexity and close-to-convexity, distortion theorems bounds for  $f'(z)$  are obtained using Goluzin's method of variations for the classes  $W(k, \alpha)$  and/or  $W(k)$ .

Reviewer: V.Karunakaran

**MSC:**

- 30C45 Special classes of univalent and multivalent functions of one complex variable (starlike, convex, bounded rotation, etc.)
- 30C70 Extremal problems for conformal and quasiconformal mappings, variational methods

**Keywords:**

radius of close-to-convexity; bounded boundary rotation; radii of convexity